

What is Claimed is:

1        1. A method for the qualitative and/or quantitative detection of a ribosome  
2 inactivating protein, comprising:

3                 contacting a sample suspected of containing a ribosome inactivating protein  
4 with an oligonucleotide substrate having a GA<sub>x</sub>GA tetraloop wherein "A<sub>x</sub>" is a nucleoside  
5 comprising an adenine base, derivative or analog thereof; and

6                 detecting the presence of the adenine base, derivative or analog thereof  
7 released from "A<sub>x</sub>" of said tetraloop as an indication of the presence of the ribosome  
8 inactivating protein in the sample.

1        2. The method of claim 1, further comprising treating the adenine base,  
2 derivative or analog thereof released from said tetraloop with a fluorescent reagent  
3 compound for forming a fluorescent adenine derivative or analog base capable of emitting  
4 fluorescence.

1        3. The method of Claim 2, wherein the fluorescent reagent compound is an  
2 acetaldehyde.

1        4. The method of Claim 3, wherein the acetaldehyde is a haloacetaldehyde.

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1       5.     The method of Claim 4, wherein the haloacetaldehyde is selected from the  
2 group consisting of bromoacetaldehyde and chloroacetaldehyde.

1       6.     The method of claim 1 wherein the adenine base, derivative or analog thereof  
2 is capable of emitting fluorescence when released from said tetraloop.

1       7.     The method of claim 6 wherein the fluorescent adenine base, derivative or  
2 analog base of "A<sub>x</sub>" is 2-aminopurine.

1       8.     The method of claim 1 wherein the oligonucleotide substrate comprises 2'-O-  
2 methylated nucleosides.

1       9.     The method of claim 8 wherein the 2'-O-methylated oligonucleotide substrate  
2 is attached to a solid support.

1       10.    The method of claim 8 wherein the GA<sub>x</sub>GA tetraloop comprises  
2 deoxyribonucleosides.

1       11.    The method of claim 8 wherein the "A<sub>x</sub>" of the GA<sub>x</sub>GA tetraloop comprises a  
2 deoxyribonucleoside.

1       12. The method of claim 9 wherein the solid support is Sepharose.

1       13. The method of claim 2 further comprising detecting the presence of the  
2 fluorescent adenine derivative or analog base of "A<sub>x</sub>" using fluorescence spectrometry.

1       14. The method of claim 2 further comprising detecting the presence of the  
2 fluorescent adenine derivative or analog base of "A<sub>x</sub>" using high pressure liquid  
3 chromatography.

1       15. The method of claim 6 further comprising detecting the presence of the  
2 fluorescent adenine derivative or analog base of "A<sub>x</sub>" using fluorescence spectrometry.

1       16. A reagent for detecting the presence of ribosome inhibiting proteins, said  
2 reagent comprising an oligonucleotide substrate including a GA<sub>x</sub>GA tetraloop wherein "A<sub>x</sub>"  
3 is a nucleoside comprising a fluorescent adenine derivative or analog base capable of  
4 emitting a fluorescence when released from said tetraloop.

1       17. The reagent of claim 16 wherein the nucleoside, "A<sub>x</sub>", comprises a 2'-  
2 deoxyribose sugar.

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- 1        18. The reagent of claim 16 wherein the nucleoside, "A<sub>x</sub>", comprises a D-ribose
- 2        sugar.
  
- 1        19. The reagent of claim 16 wherein the fluorescent adenine derivative or analog
- 2        base of the nucleoside "A<sub>x</sub>" is 2-aminopurine.
  
- 1        20. The reagent of claim 16 wherein the oligonucleotide substrate comprises 2'-
- 2        O-methylated nucleosides.
  
- 1        21. The reagent of claim 20 wherein the oligonucleotide substrate is a dAU6
- 2        20mer attached to a solid support.
  
- 1        22. The reagent of claim 20 wherein the oligonucleotide substrate is a dA 14mer.
  
- 1        23. The reagent of claim 20 wherein the GA<sub>x</sub>GA tetraloop comprises
- 2        deoxyribonucleosides.
  
- 1        24. The reagent of claim 20 wherein the "A<sub>x</sub>" comprises a deoxyribonucleotide.

1        25. An assay kit for the qualitative and/or quantitative detection of a ribosome  
2 inactivating protein, said assay kit comprising:  
3                  an effective amount of an oligonucleotide substrate having a GA<sub>x</sub>GA tetraloop  
4 wherein "A<sub>x</sub>" is a nucleoside comprising an adenine base, derivative or analog thereof; and  
5                  a vessel for retaining a sample suspected of containing a ribosome  
6 inactivating protein in contact with the substrate.

1        26. The assay kit of claim 25 further comprising an effective amount of a  
2 fluorescent reagent compound capable of reacting with the adenine base, derivative or  
3 analog thereof released from "A<sub>x</sub>" to form a fluorescent adenine derivative or analog base.

1        27. The assay kit of claim 25 wherein the adenine base, derivative or analog  
2 thereof is capable of emitting fluorescence when released from the nucleoside, "A<sub>x</sub>".

1        28. The assay kit of claim 27 wherein the fluorescent adenine base, derivative or  
2 analog thereof is 2-aminopurine.

1        29. The assay kit of claim 26 further comprising a fluorescence measuring  
2 apparatus.

1        30. The assay kit of claim 27 further comprising a fluorescence measuring  
2 apparatus.